

FE Exam Information

The ethics questions test students on reading comprehension and elementary logic.

- Assumptions are necessary since exam problems may not give complete information.
- Answers that require large leaps in logic are almost always wrong.
- Answers that relate to professional societies are probably wrong.
- There will likely be nonsense answers that are irrelevant to the problem statement, engineering, or ethics.
- Beware of true statements about ethics that are not germane to the problem.

Read the Ethics pages in the NCEES FE Handbook *at least four times* and read FERM Chapter 54.

Obligation to Society

An engineer's first obligation is always to society. This obligation takes precedence over all others.

A registered engineer's obligations to society are summarized as follows:

- Be a guardian of the public safety.
- Submit truthful and complete reports, statements, and testimonies.
- Don't abuse credibility.
- Don't be involved in fraud.
- Inform state board of possible ethics violations.

Obligation to Society

Example (FEIM):

A registered engineer is being interviewed for television on a matter relating to his expertise that affects the public safety. The interviewer asks a question about the chances for a cure for AIDS. The engineer should

- (A) express his opinion honestly and completely
- (B) decline to comment
- (C) recount what he read in a magazine article on the subject
- (D) suggest everyone get an AIDS test

The engineer's credibility with the public should not be abused. The public could attribute too much credibility to the engineer's opinion because of his perceived expertise. Or the public might have less confidence in the engineer's expertise on the matter of public safety if they disagree with his opinion on AIDS. Protecting his credibility on matters of public safety is all the engineer should care about, so he should decline to comment.

Therefore, (B) is correct.

Obligation to Employers and Clients

Registered engineers' obligations to employers or clients are secondary to their obligation to society. Where there is a conflict, the interests of society (especially regarding safety) take precedence.

Obligations to employers or clients are summarized as follows:

- Only accept assignments the engineer is qualified to complete.
- Don't sign and seal plans or documents on something the engineer is not competent in, or that were not prepared under his/her direct supervision.
- Coordinate projects that include segments in which they are not competent only if a qualified registered engineer signs and seals plans and documents for those segments of the project.
- Protect facts, data, and information belonging to the employer or client.

Obligation to Employers and Clients

- Don't accept anything of value for work from any other parties except the employer or client, unless agreed to by all parties.
- Make prior disclosure of any actual or perceived conflicts of interest.
- Don't contract with a government body if a member of the engineer's organization has influence on the government body's contracting decisions. Conversely, if the engineer is part of a government body and can influence contracting decisions, the engineer should not contract with any outside organization to which he/she belongs.

Obligation to Employers and Clients

Example 1 (FEIM):

Under what circumstances can a registered engineer sign and seal plans or documents he/she did not prepare?

- (A) Registered engineers can coordinate projects that include segments that they are not competent in if a qualified registered engineer signs and seals plans or documents for those segments of the project.
- (B) Under no circumstances.
- (C) If the plans or documents were prepared by someone under the registered engineer's direct supervision and the registered engineer is an expert in the subject matter.
- (D) When practicing in a state different than the one in which the engineer is registered.

Answer (A) is a true statement, but it has nothing to do with the problem statement. Plans or documents prepared under the direct supervision of a registered engineer where the engineer is an expert, can be signed and sealed by the engineer assuming he or she has reviewed the plans or documents.

Therefore, (C) is correct.

Obligation to Employers and Clients

Example 2 (FEIM):

You and your design group are competing for a multidisciplinary concept project. Your firm is the lead group in the design professional consortium formed to compete for the project. Your consortium has been selected to be the first to enter fee negotiations with the project owner. During negotiations, the amount you have to cut from your fee to be awarded the contract will require dropping one of the consortium members whose staff has special capabilities not found in the staff of the remaining consortium members.

Is your consortium response in the negotiations ethical?

- (A) No, not if the owner is left with the impression that the consortium is still fully qualified to perform all the required tasks.
- (B) Yes, if your remaining consortium members hire a few new, lower cost employees to do the special work originally intended to be provided by the consortium member dropped.
- (C) No, because an engineer may not accept a contract to coordinate a project with other professional firms providing capabilities and services not under the engineer's direct control.
- (D) Yes, if in accepting an assignment to coordinate a project, a single person will sign and seal all the documents in the entire consortium work.

Obligation to Employers and Clients

It is never ethical to accept a contract if you or the organization you are negotiating for cannot complete the work. Answer (A) does not tell us if the scope of the contract will be reduced so the consortium can complete the work without the eliminated partner, or if the consortium has some other way of completing the work without the special skills of the eliminated partner, so we can't really say that answer (A) is correct, but it is the best option provided.

Therefore, the answer is (A).

Obligation to Other Registrants

A registered engineer's obligation to other registrants is less important than the obligation to society. Where there is a conflict, the interests of society (especially as regards safety) take precedence.

A registered engineer's obligations to other registrants are summarized as follows:

- Don't falsely represent one's qualifications or the qualifications of associates.
- Don't solicit, accept, or give anything of value to secure work.
- Don't give a political contribution to influence the award of a contract by a public authority.
- Don't try to damage the careers of other registrants falsely. There are specific circumstances where one can act against another registrant's career without it being a violation of this obligation. These circumstances are summarized as follows:
 - When one registrant has reason to suspect something another registrant has done, or will do, threatens the public safety.
 - When one registrant has reason to suspect another registrant has violated, or will violate, their ethical code.
 - When one registrant has reason to suspect another registrant has committed, or will commit, fraud.

Obligation to Other Registrants

Example (FEIM):

A registered engineer has applied for a promotion at a firm she has been working at for several years. During an interview for the new position, she is asked to contrast her qualifications with other registered engineers at the firm who have applied for the same position. She should

- (A) withdraw her application for the position.
- (B) give a full accounting of all the ways her ability and experience are superior to those of the other applicants.
- (C) demand to speak to the interviewer's supervisor.
- (D) decline to compare her qualifications but offer to describe them.

It is not a violation of a registered engineer's obligation to other registrants to promote their own qualifications. However, one can't help but speak negatively about another registrant when comparing qualifications in a circumstance like this. The engineer in this situation can discuss her qualifications for the position but cannot ethically compare qualifications with other registrants applying for the position. The other registrants can then discuss their qualifications, and the employer can make the comparisons.

Therefore, (D) is correct.

Expert Witness

An expert witness has only one obligation:

- To give a complete and objective analysis of the facts pertaining only to his or her area of expertise.

Before and after a registered engineer testifies as an expert witness, he/she has the same obligations as any other registered engineer.

An expert witness is not a character witness or material witness. Expert witnesses only have knowledge of evidence in the case or data relevant to the case. They can express their *opinions*, and are not limited to stating the facts only.

Expert Witness

Example (FEIM):

A registered engineer is retained as an expert witness by one of the parties in a civil case where the public safety is not involved. In investigating the technical data in the case, the engineer makes findings that are not favorable to the side of the party who retained her. The engineer should

- (A) inform the party who retained her of the findings.
- (B) inform the judge of the findings.
- (C) inform the opposing party of the findings.
- (D) say nothing about the findings until called to testify.

In this case, the engineer has only an obligation to her client until she is called to the stand, so she should report her findings to the party who retained her and that party will decide whether or not to call the engineer to testify.

Therefore, (A) is correct.

Consultants

Consultant:

A registered engineer acting as a consultant must be fully qualified as an expert in the subject matter.

Registered Engineer:

A registered engineer may be hired for a regular position requiring expertise in some area where the engineer is not an expert, as long as the employer knows this and arrangements are made for the hired engineer to be trained in those areas. This is not so, however, for a consultant.

Consultants have the same obligations to clients that registered engineers who are regular employees have to their employers. They are obliged to protect data, processes, and information belonging to the client and not share these with other clients. There are exceptions, however.

For example, if the consultant develops analysis techniques, special skills, experience, etc., working for one client, he/she can use this when working for another client as long as it doesn't involve something deliverable under a contract with the former client (e.g., a software algorithm).

Consultants

Example (FEIM):

A professional engineer, originally licensed 30 years ago, is asked to act as a consultant on a newly developed computerized control system for a public transportation system. The engineer may accept this project if

- (A) he or she is competent in the area of modern control systems.
- (B) his or her professional engineering license has not lapsed.
- (C) his or her original area of specialization was in transportation systems.
- (D) he or she has regularly attended annual meetings of a professional engineering society.

By definition, if he or she is a professional engineer, his or her license cannot have lapsed, so (B) is wrong. All that matters is that the professional engineer is competent.

Therefore, (A) is correct.